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ABSTRACT

The progress of groups of junior high school students working together was measured by the developmental theories of Bloom, Piaget, and Kohlberg. Each group was assigned the task of designing a coat-of-arms representing their neighborhood. This project involved not only physically producing a shield (designing, drawing, choosing colors) but also comprehending their community and creating symbols for it. This study traces the thought processes and group dynamics that eventually produced each coat-of-arms, using as reference points Bloom's taxonomy of sequential and progressive educational objectives, as well as Piaget's theories on cognitive development and Kohlberg's stages of moral development. (JD)

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TEACHER CORPS

UNIVERSITY OF NEW HAMPSHIRE & PORTSMOUTH JUNIOR HIGH SCHOOL

TEACHER CORPS PROJECT

Cycle XII

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UNIVERSITY OF NEW HAMPSHIRE-PORTSMOUTH
12TH CYCLE TEACHER CORPS PROJECT
1977 - 1979

NEIGHBORHOOD COAT-OF-ARMS PROJECT:

Bloom's Taxonomy and Other Developmental Theories in Action

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PREFACE

The purpose of this paper is to give specific information to Teacher Corps members about a community education project which was implemented at Portsmouth Junior High School in Portsmouth, New Hampshire. The Project was conceived during a brainstorming session of the UNH-Portsmouth Teacher Corps team. When created, the Project was seen by its designers as serving three major functions: (1) to involve students in a way that was both enjoyable and educational; (2) to address the Community Component of the Teacher Corps Project by helping junior high school students to develop a clearer sense of their communities and by bringing their communities into the school; and (3) to be a medium in which the intern team could work and learn together, while making a contribution to Portsmouth Junior High School.

INTRODUCTION

Intuition, above all else, is the one quality which enables teachers to survive the daily rigors of the classroom and often excel at what they do. After teaching for two or three years and when no rule exists which requires lesson plans, teachers tend to do things in the classroom which they intuitively know will cause the desired educational growth in students. Although teachers often do not use current educational theory and terminology to describe what happens in his classroom, educational theory exists which provides an observer with a framework to analyze and understand what has taken place.

Benjamin Bloom developed a taxonomy of six sequential and progressive educational objectives which classifies all educational objectives in the classroom so that academic performance can be assessed. By using Bloom's taxonomy, a better understanding can be grasped of student development and experience in a program named the Neighborhood Coat-of-Arms Project. Conversely, this project provides clear illustrations of Bloom's theory in practice. As other developmental theories are clarifying and expianatory, especially Piaget's stages of cognitive development, they are mentioned.

FIRST OBJECTIVE: BASIC KNOWLEDGE

Bloom's first level educational objective, which he calls basic knowledge, specifies that the student acquire factual knowledge. Once a student forms a knowledge base, he often can progress to a higher level of academic thinking and performance.

The interns* initial objective during the Neighborhood Project's first session was to give a workable knowledge base to the students. Each of the

Intern team members was in a different classroom, eliciting from between twenty-five (25) and thirty-five (35) students what knowledge the class already had about coat-of-arms or heraldry. Almost all of the students had heard of coat-of-arms or shields; few had worked to construct one before or knew the components of a coat-of-arms. So what interns had suspected, they learned only after working with students, that providing a workable knowledge base for each student was their first educational task.

All interns instructed using Flander's research on indirect teaching to involve students and to spark interest in the Coat-of-Arms. Flander's research stated that over 85% of teachers employ a direct style of teaching[1] which elicits little student involvement. He found when students do most of the talking and become actively involved in their learning (Dewey also prescribes this), they learn more and their interest increases. Interns asked students who had created a coat-of-arms before, "what do you understand a coat-of-arms or shield to be?" and "what types of symbols did you and other students put on the coat-of-arms you made before?"

The answers students gave were a natural lead-in to illustrating and labeling the components of a coat-of-arms on the blackboard. The students designed the following four components: a shield of any shape with the most traditional shape displayed on the board; a motto stating a phrase representative of his/her neighborhood; supporters, which could be any animal or imaginary creature standing on either side of the shield displaying it; and symbols of their communities like their elementary school, a swimming pool, a community store. Supplementing instruction were books on heraldry from the Junior High library which the students could look at and pass around. Essentially, this is the knowledge base students were given during the project's first session.

One neighborhood community of students stood out from the others because of their basic knowledge, comprehension, and application: Pease Air Force base students. Coat-of-arms are displayed everywhere in their environment; some symbolized the whole Pease Air Force base and others symbolized the different divisions of the Base. This community of students created the most coat-of-arms (6). Visualizing symbols did not seem to be a problem at all; only choosing which symbols would be most appealing on a poster and represented their experience best.

SECOND OBJECTIVE: COMPREHENSION

Bloom labels his second educational objective comprehension. How well the students can illustrate (or restate) the facts in their own words indicates how well they comprehend the facts.

In the Coat-of-Arms Project, one way that the interns assessed the students' comprehension was by asking them to list all the things that represented their community. Students generally responded in three ways. Some listed things like swimming pools, stores, flower shops, and the Mall which indicated that they comprehended the basic knowledge interns had offered. These students could understand concepts like symbols and think of symbols on their own. They were probably at a higher stage of cognitive development (Piaget) than the following group of students. This group of students understood the task but when they thought of symbols of their community, their elementary school dominated their thoughts and coat-of-arms. These students' inability to represent their community by various symbols indicates they're probably in the concrete stage. The other prominent group were students for whom the project had little meaning or motivation. Interns generally encouraged these students to participate in the project through Bloom's next two educa-

tional levels (application and analysis) so that they influenced the shield's development and were at least exposed to the project enough to choose whether to stay or leave. Interns saw little indication of these students' level of cognitive development.

THIRD OBJECTIVE: APPLICATION

In Bloom's taxonomy of educational objectives, his third developmental step is called application. At this stage of development, students were required to demonstrate that they could apply their ideas.

An important step for students during the Coat-of-Arms Project was their construction of rough drafts. This meant translating both general and specific information about heraldry or coat-of-arms into symbols which represented their neighborhood. The degree to which a student could construct a rough draft which incorporates factual information determines whether he/she was actually applying learned in formation or just transferring memorized information. Thus, the rough draft itself is an assessment tool for evaluation of a student's success at this level.

At this developmental stage, students at the concrete level (ages 7-11) of cognitive development are clearly discernible from those students operating primarily in the formal operations (ages 12-18) stage of cognitive development. The literal-mindedness which characterizes the concrete stage was exemplified by students whose elementary school almost totally symbolized their neighborhood to them. For example, a group of students from Atlantic Heights drew a coat-of-arms consisting of only two things: a circular picture of the front door of their elementary school and the title of their neighborhood. Another group from the New Franklin neighborhood constructed a drawing with Ben Franklin flying a kite titled "New Franklin School" and nothing else. A group

of students from Little Harbour depicted all elementary school related symbols on their shield: a book, a pencil, and a football. These students seemed unable to conceptualize what their neighborhood meant to them and think of symbols representative of more than one theme. Their dominant experience, usually their elementary school, was often the only theme and symbol of their rough draft.

In contrast to these students who represented their neighborhood in a one dimensional manner characteristic of concrete level development were other students who could represent their neighborhood by various symbols and designs. One student from the Little Harbour community illustrated twenty-three (23) neighborhood symbols on her coat-of-arms including a sports playground, several restaurants, an activities park, a bowling center, the harbour, and a clothing store. A group of students from Seacrest were the only group to divide the shield into six divisions. Each division had a separate theme: a waist-down view of someone on a skateboard; the community seal; a bee approaching a flower; and others. Their coat-of-arms also displayed the two former names of their community along with its present name. Students from Atlantic Heights represented several themes on their shield including their favorite wooded area and their most popular hangout: an old cement bus shelter. These students' ability to conceptualize and represent different themes through the use of various symbols indicates that they are operating at the formal operations cognitive level in some respects.

Moral development became an issue and objective at the rough draft stage of the Neighborhood Coat-of-Arms Project. Students from the Seacrest community created a coat-of-arms that concerned the intern staff in two ways: (1) the coat-of-arms these students constructed displayed little thought, time or work. These students' comments indicated that the coat-of-arms' primary function was

to draw attention and laughs from fellow students; (2) the coat-of-arms depicted symbols that the community at large would view as negative, socially unacceptable, and/or controversial. In Kohlberg's moral development theory, staff concern was Conventional, Level 3 - concern for group eg. parents, school administration feelings and reactions. These students drew symbols of a marijuana plant, garbage, broken windows, Budweiser beer, all negative or controversial symbols for Junior High students to pick as representative of their community. The strategies the intern staff employed were designed to clarify student values and promote moral growth by asking them questions requiring different levels of cognitive and moral reasoning. These students were asked "do you know your parents will see your drawing?" (Level 1 - authority who can punish; Kohlberg) and "what do you think they'll think?" (Level 3 - Concern for how others will think; desire to please others - Kohlberg). Next, the students were asked to consider and clarify their thoughts about the community. (Values clarification) "Your shield has only negative or bad things on it." "Are most things either all good or all bad?" "Do you see your community as all bad?"

In a different approach, interns asked the students to consider how much they valued the drawing as it was. An intern noted that their drawing was neither carefully drawn nor neatly colored. The intern asked the students to think about the questions the intern had asked and to take pride in their final Coat-of-Arms by putting some work into it.

The three male students conferred and decided to change all the negative symbols except one, the broken windows.

These students exhibited Stage 2 moral development (Kohlberg). Their attitude was "when other students see our drawing, they'll think it's funny and cool; others will treat us like funny and cool people." Their decision to change was based on a combination of two things: their values clarification

and their thinking at a higher moral level - Stage 3 - concerned with how others will see them; they will be thought of as "bad boys" because of what they drew.

FOURTH OBJECTIVE: ANALYSIS

Bloom's fourth educational objective is analysis. To meet this objective students must break down and classify the whole into its parts and comprehend the relationship between these parts. At a high level of cognitive development, this means identifying the parts of the whole labeling them according to their function, relating the function of the parts to each other, recognizing the overall objective and relating the function of the parts and whole to that objective.

Although all students participated in the project through the analysis level, not all students were able to critically analyze and evaluate their coat-of-arms from more than one perspective. Some students constructed a drawing which was appealing to themselves but showed little thought or conceptualization about whether it would appeal to their peer judges. For example, one group of Pease students constructed a drawing depicting Snoopy riding a dog house-shaped airplane which appealed to the artists but did not have the detail or boldness to compete with other posters from that community. These students were operating at a lower level of cognitive development than many students in the project.

Many of the neighborhood groups analyzed the situation critically. They attempted to design and construct a coat-of-arms that met two criteria: (1) it must be appealing to their own group; (2) it must be well-constructed and interesting enough to compete and win against other drawings from their community. For students to do the latter, they had to analyze what designs, symbols, and colors would appeal to their peer judges. "Would lions be more

appealing than two dragons?" "Does the shield look better to us divided into two, three, or six sections?" "What will the judges think?" The development exhibited by these students' ability to critically think along more than one dimension indicates that in some aspects these students were operating at Piaget's formal operations level of cognitive development.

The second form of analysis that each neighborhood group performed was group skill analysis. The interns instructed each neighborhood group to narrow its group down to a smaller group in which all members were assigned specific roles and tasks. This group would become the synthesis group and would be responsible for producing the finished coat-of-arms; those who were not assigned specific tasks or rules left the project after the analysis stage and went back to class.

Some groups went through a similar process to classify and assign roles to members. "Who's good at drawing lions," one member would ask, "Aren't you Joe?"

"No, I can't draw no lions. I'll do the school scene though."

"Anne, what are you going to do?"

"I don't know. I'll just paint."

Groups that used random assigning often achieved poor synthesis of their rough draft and/or ideas. Their lack of critical analysis to determine roles limited their development at this level.

Other groups approached group analysis systematically. Someone within each group took the leadership, decided what needed to be done and then chose members to do specific tasks by asking for volunteers then testing them to see if they could do their tasks to the satisfaction of the group. The Little Harbour group, which produced the winning coat-of-arms in their neighborhood, approached analysis this way. Not only did they assign the production of each

symbol to a specific person, but one person was responsible for all detailing and another for all outlining and highlighting. This group's ability to analyze, break down and classify the different components of their coat-of-arms and then coordinate these with the individual abilities in the group indicates formal operations performance relative to this specific task.

FIFTH OBJECTIVE: OBJECTIVE SYNTHESIS

Bloom's fifth educational objective is labeled objective synthesis. At this level, students must combine previously learned knowledge and skills to produce something new or creative or take a unique or creative approach to a problem. Successful completion of the first four educational objectives determines a student's ability to complete the fifth objective.

During the creation of the Coat-of-Arms drawing, students performed objective synthesis in two ways: (1) rough draft synthesis; (2) intuitive synthesis.

Rough draft synthesis occurred in most of the neighborhood groups. Within each group, individuals and subgroups worked on separate rough drafts. The students who were producing these rough drafts had previously been instructed by the interns that all rough drafts from one neighborhood must be synthesized into one final rough draft by the end of the project's second session. In one of the Pease groups, six different rough drafts were constructed. Each artist started out arguing the merits of his/her rough draft versus all others from this group. Eventually, the artists and other group members began caucasing for specific parts of each of the six drafts to be incorporated into the final rough draft. This process resulted in one rough draft which combined the best elements of the original six drafts. Although not every neighborhood produced as many rough drafts, most groups followed this synthesis process.

Students who used an intuitive objective synthesis process began with four things: (1) an overall objective for their Coat-of-Arms (self-expression and/or to win the contest); (2) a feeling for what he/she wanted to create; (3) knowledge and skills acquired at the first four levels; and (4) a blank piece of 14" by 22" paper. From this point the student let his intuitive thoughts and feelings guide how he/she used his knowledge and skills. The student kept a general image in his head instead of on paper, so his coat-of-arms was more subject to drastic change or new directions than if he had used rough draft synthesis. Because each coat-of-arms was constructed and coordinated piece-by-piece onto the final draft, each coat-of-arms took a form representative of the individuals creating it. Each time a student was able to produce a coat-of-arms which expressed his/her ideas well and/or could compete with other coat-of-arms from his/her community, that student probably experienced increased self-confidence in his ability to think and create then work a task through to completion. For example, teachers had noted that a particular student from Seacrest showed little interest or motivation in any area. This same student worked almost everyday for three weeks straight intuitively synthesizing information and images onto paper. Not only were his symbols unique (a leafless tree with the moon rising through its branches, a seal with an anchor and the "U.S. Seacrest" label), but he was the only student to highlight sections of his coat-of-arms by creating raised, wavy surfaces with acrylic paints. Despite this student's low academic motivation and interest, his ability to perform some formal operations tasks is indicated by his performance at level five of Bloom's taxonomy of educational objectives.

SIXTH OBJECTIVE: OBJECTIVE EVALUATION

Bloom's sixth and final educational objective is objective evaluation.

This level is concerned with the student's developing standards and values, then learning to make educated (critical) judgments according to these standards. The student must have developed at each of the previous five levels in order to perform well at the sixth level.

In the Neighborhood Coat-of-Arms Project, objective evaluation was done by some students and staff during the voting sessions which involved almost all of Portsmouth Junior High's students and about half of P.J.H.S.'s staff. Interns gave ballots to P.J.H.S.'s students and staff to vote eleven (11) times in two categories: (1) best Coat-of-Arms in each of the ten(10) neighborhoods; (2) best Coat-of-Arms out of the thirty-six (36) produced in this program.

Most of the students and staff voted for a particular coat-of-arms for subjective reasons: it appealed to their senses a little more than another one did; they had helped make it; or they knew the creators of it, liked them, so voted for their coat-of-arms. Their judgments were based on feelings and ignored the knowledge and skills developed during the first four levels. (98% of all students involved continued in the project through the analysis level.) Usually they went with the crowd and voted the way their friends did. These students' actions in this situation represents Level 3 moral development: desire to have others' approval of their actions.

Other students and staff approached the voting analytically. They established standards and values and voted accordingly despite their impulses. Their standards included neatness, originality of content, color coordination, number of symbols, and amount of detail. Interns heard comments from staff and students alike that "they really put a lot of work into that one" and "that's a neat idea" and "look at all the neat things on that one." Many of these students were able to establish standards because of the knowledge base and anal-

ysis skills they picked up in the previous five levels. These students showed formal operations ability in this instance.

SUMMARY

In retrospect, the intern team realized it had unknowingly devised and implemented a program which exposed and tested 75% of Portsmouth Junior High students (650) through the first four objectives of Bloom's taxonomy. More than a thir of this group (220) continued on to the synthesis level and were exposed to Bloom's fifth objective. All P.J.H.S. students who participated in the project combined with the other P.J.H.S. students to participate in the voting process and were exposed to Bloom's sixth and final objective. Since Bloom's sixth objective incorporates knowledge, skills, and analysis of his first five levels, the minority of students who performed at Bloom's sixth level during the voting process were the same students who stayed in the project through the synthesis objective.

Students displayed various signs of affective, moral, and cognitive development during the course of the project. Additional educational concerns, objectives, and/or dividends that the project addressed are listed as follows: (1) Individual responsibility and initiative - after one week; students reported to interns for supervision whenever they wanted to work. Both interns and students went to the cafeteria to work; (2) Discipline problems - students who were noted discipline problems in the classroom were placed in positions of responsibility, as chairperson of a neighborhood group or in charge of supplies. Students responded well and were reinforced and kept on task by their peers; (3) Small group process - all students in the project experienced this and all had to determine their group role; (4) Values clarification - interns used the inquiry method every chance so students clarified and created what they wanted,

not what they thought the interns wanted; (5) A student worked for a month and created a large wooden community coat-of-arms for his parents for Father's Day; (6) At a Neighborhood Nite held after the project was completed, one hundred parents, students, and members of the Portsmouth community came together to view the thirty-six (36) neighborhood Coat-of-Arms and see the creators of the winning coat-of-arms from each neighborhood receive iron-on decals of the coat-of-arms they had constructed.

If more time had been available, interns would have compiled more information through a more thorough analysis of students' cognitive processes and development at different points of the project. Perhaps when this project is duplicated, deeper analysis and more thorough documentation will be conducted.

APPENDIX

The purpose of this appendix is to provide Teacher Corps members with specific information that was not appropriate within the body of this paper.

1. Organization

a) School - P.J.H.S. is the only junior high in Portsmouth, N.H. Eight elementary schools feed into this building creating a population of 850 students. Within P.J.H.S.'s one building are four (4) administratively created Houses or Schools with similar numbers of heterogeneously grouped students: (1) WHIPPLE HOUSE, (2) ALDRICH HOUSE, (3) LANGDON HOUSE, (4) THAXTER HOUSE. This is called the "School Within a School" concept.

b) Weekly Format

1st day - Introduction, description/example of task, brainstorming by students

2nd day - Individual and group rough drafts, sharing of all ideas between members of one community, final rough draft decided by group, group narrowed to those that will produce final coat-of-arms (Synthesis group)

3rd day - Synthesis groups meet in cafeteria where supplies (paint, colored pencils, rulers, etc.) are available.

4th day - Continued work by synthesis groups on final products in cafeteria

5th day - Wrap-up of this House (Last prescheduled meeting - students must initiate future meetings)

2. Time

During the Neighborhood Coat-of-Arms Project which ran for four weeks each House was taken through the process one at a time, one week at a time. The students worked one class period each day (approximately 45 minutes). On the Monday of the following week a different school started the process,

whether the students of the preceding group had finished their coat-of-arms or not. Most coat-of-arms were finished at the end of the five days and it became the students' responsibility to find a T/C staff member to supervise their work during a free period.

Project began March 6-10 (Whipple House)
March 13-17 (Aldrich House)
March 20-24 (Langdon House)
March 27-31 (Thaxter House)

Staffing

During the first two days of each House, the four interns met in separate classrooms, each working with 25 to 40 students. When the synthesis groups were formed and these groups moved to the cafeteria to work, less supervision was needed. One to four interns supervised the cafeteria session.

Costs

$50.00 supplies - including forty (40) 14" by 22" poster boards, 15 acrylic paints, numerous colored pencils, water color markers, rulers

Costs

Prizes - four trophies for $8.00 total given to four students whose coat-of-arms was voted best Coat-of-Arms of the 36 produced

Iron decals (for T-shirts) of each winning Coat-of-Arms in each of ten (10) communities identified

Decals cost - $410.00 total

Silkscreen company charged $5.00 a piece to produce 10 screens = $50.00

Required 36 minimum amount of decals per screen at $1.00 for each decal times ten (10) communities = $360.00

If all decals are sold to students at cost $1.00 a piece, $360.00 could be recouped.

Neighborhood (Awards) Nite

The focus of the night was a display of the coats-of-arms and awards to the creators of the winning shield from each neighborhood. The night served two other purposes: (1) it got over a hundred Portsmouth residents, including parents and students, into the school; (2) it gathered favorable publicity for Portsmouth Junior High and Teacher Corps in the city newspaper and by word of mouth. The awards ceremony was run by the intern team and was preceded by a 15-minute student-produced slide show of two Portsmouth communities. Following awards was a free disco dance demonstration performed by a local disco troupe.

REFERENCES

*Interns or Intern team consists of a Team Leader who taught in this school for six years and three (3) Teacher Interns. The author is one of these Interns.

[1]Sprinthall, R.C. and Sprinthall, N.A., Educational Psychology: A Developmental Approach; Addison-Wesley Publishing Company, Inc., Philippines, 1977.

BIBLIOGRAPHY

Bloom, B.S. and Hastings, J.T. and Madaus, G.F., Handbook on Formative and Summative Evaluation of Student Learning; McGraw-Hill Book Company, New York, U.S.A., 1971, pp. 1-13, 40.

Sprinthall, N.A. and Sprinthall, R.C., Educational Psychology: A Developmental Approach; Addison-Wesley Publishing Company, Inc., Philippines, 1977, pp. 124-137, 240-250; pp. 365-368; pp. 383-385.